

Is Spontaneous Regrowth in Alopecia Areata Possible: A Systematic Review and Meta-analysis of Placebo-controlled Studies

Beata JASTRZĄB-MIŚKIEWICZ¹, Jacek C. SZEPIETOWSKI^{2,3*}, David Saceda CORRALO^{4,5} and Piotr K. KRAJEWSKI¹

¹University Centre of General Dermatology and Oncodermatology, Wrocław Medical University, Wrocław, ²Division of Dermatology, Venereology and Clinical Immunology, Faculty of Medicine, Wrocław University of Science and Technology, Wrocław, ³Department of Dermatovenereology, 4th Military Hospital, Wrocław, Poland, ⁴Servicio de Dermatología, Hospital Universitario Ramón y Cajal, IRYCIS, Madrid, and ⁵Hair Disorders Unit, Grupo Pedro Jaén, Madrid, Spain. *E-mail: jacek.szepietowski@pwr.edu.pl

Submitted Jun 16, 2025. Accepted after revision Sep 30, 2025

Published Oct 28, 2025. DOI: 10.2340/actadv.v105.44153. Acta Derm Venereol 2025; 105: adv44153.

Despite advances in therapy, alopecia areata (AA) remains a challenging condition to treat. A variety of treatment modalities are available, but no current therapy guarantees sustained hair regrowth. Spontaneous remissions may occur in AA, complicating the distinction between genuine treatment effects and the natural course of the disease. Relapses are common due to the condition's unpredictable course (1, 2). Spontaneous recovery of hair growth was reported as 34–50% within 1 year after AA occurred (3). However, there is a lack of standardized studies quantifying this spontaneous regrowth rate in AA patients, leaving a gap in understanding the disease's natural process.

Notably, in addition to its physical effects, AA carries substantial psychological and social burdens. The visible hair loss can precipitate significant emotional distress and disrupt patients' work and social activities. Patients commonly experience emotional strain, negative self-perception, stigma, and markedly reduced quality of life (QoL) (4).

Given the unpredictable nature of AA and its profound impact on patients' lives, understanding the possibility of spontaneous regrowth is crucial for optimal patient management. Quantifying the likelihood of hair regrowth without active treatment may support more informed therapeutic decisions and patient counselling.

MATERIALS AND METHODS

This systematic review was conducted in accordance with the PRISMA guidelines. To assess spontaneous regrowth, we analysed placebo arms of randomized controlled trials. Although the placebo effect may introduce a psychological component, this method offers the most objective, standardized, and ethical approach to estimate natural hair regrowth in alopecia areata under controlled conditions. Specifically, we searched MEDLINE, Web of Science, and Google Scholar databases for clinical trials of alopecia areata that included a placebo arm. The search strategy combined the term "alopecia areata" with filters for clinical trials, using the query: ((*Alopecia Areata*) OR (*alopecia areata*) OR (*AA*)) AND ((*clinical trial*) OR (*randomized controlled trial*) OR (*placebo*) OR (*control group*)). The search covered studies published from February 2004 to November 2024. No language restrictions were applied. Duplicate records were removed, and the titles and abstracts of all retrieved citations were screened for eligibility by 2 independent reviewers. Any discrepancies in study selection were resolved through discussion with a third reviewer.

We extracted data on hair regrowth outcomes observed in the placebo group from each eligible study. In most of the included

trials, the use of additional therapies for alopecia areata was explicitly prohibited during the study period. In 2 studies, however, the continued use of specific background treatments, such as stable-dose topical or oral minoxidil, finasteride, or topical corticosteroids applied outside the scalp, was permitted. Regrowth in the placebo group was defined as hair regrowth in patients not receiving treatment. The outcome measures were outlined using the Severity of Alopecia Tool (SALT) score, a standardized scale for scalp hair loss ranging from 0 (no scalp hair loss) to 100 (complete scalp hair loss) (5).

RESULTS

Following the screening and eligibility assessment, 15 out of 893 identified articles met the inclusion criteria. The analysis included 893 patients with alopecia areata who received placebo treatment. Due to heterogeneity in study designs and outcome reporting, hair regrowth was assessed using various SALT thresholds across the included trials.

Five studies, including 134 placebo-treated patients, reported response rates based on SALT30, SALT50, SALT75, and SALT90 thresholds. The pooled analysis (**Fig. 1**) revealed that 16.42% (22/134) of patients achieved a SALT30 response, with a 95% confidence interval (CI) ranging from 0.05 to 0.41. The proportion of patients reaching SALT50 response was estimated at 7.46% (10/134; 95% CI: 0.02–0.26), while 1.49% (2/134; 95% CI: 0.02–0.04) achieved SALT75 improvement. Notably, none of the patients reached the SALT90 threshold in this subgroup.

In a broader dataset comprising 684 placebo patients, hair regrowth was reported using SALT $\leq$ 20 and SALT $\leq$ 10 endpoints. Among these individuals, 4.68% (32/684) achieved a SALT score of 20 or less (95% CI: 0.02–0.15), and 2.71% (13/684) reached a SALT score of 10 or less (95% CI: 0.01–0.09).

Additionally, 818 patients were analysed based on percentage improvement from baseline, using $\geq$ SALT30, $\geq$ SALT50, $\geq$ SALT75, and $\geq$ SALT90 as thresholds (**Fig. 2**). The pooled proportion of patients achieving at least SALT30 was 8.19% (95% CI: 0.05–0.19), while 6.57% achieved at least SALT50 improvement (95% CI: 0.04–0.15). The estimated proportions for SALT75 and SALT90 responses were 5.75% (95% CI: 0.03–0.11) and 1.59% (95% CI: 0.01–0.05), respectively.

% SALT improvement thresholds

Final absolute SALT scores

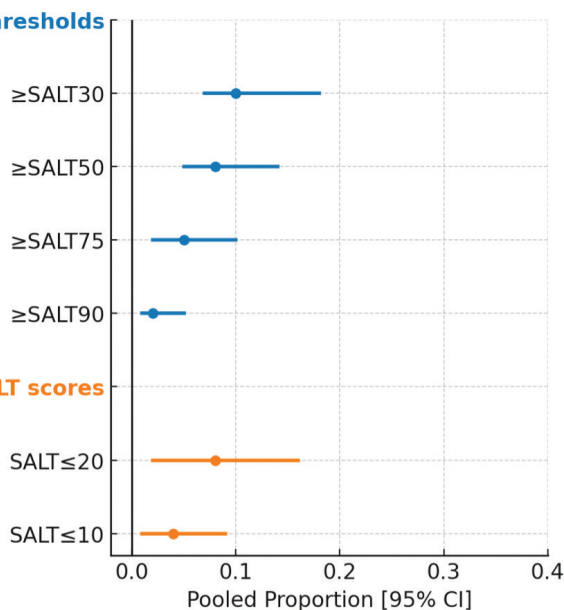


Fig. 1. Pooled proportions of placebo patients achieving percentage improvement thresholds ($\geq$ SALT30, $\geq$ SALT50, $\geq$ SALT75, $\geq$ SALT90). Points show pooled estimates with 95% CIs. Pooled proportions of placebo patients achieving final absolute SALT scores (≤ 20 , ≤ 10); points show pooled estimates with 95% CIs.

DISCUSSION

AA is an autoimmune disorder and the second most prevalent form of non-scarring hair loss after androgenetic alopecia (1). The pathogenesis of AA is complex and multifactorial, involving both genetic predisposition and environmental triggers. Although progress has been made in understanding its immunological mechanisms, predicting the clinical course remains a challenge (6). The disease often follows an unpredictable, relapsing–remitting course, with episodes of hair loss interspersed with periods of regrowth (1, 2). While spontaneous hair regrowth may occur in some cases, the precise frequency and predictors of such recovery remain poorly defined (1, 2, 7).

Our systematic review and meta-analysis highlight that hair regrowth in placebo-treated AA patients occurs in

only a minority of cases, underscoring important implications for clinical practice. In placebo-treated cohorts of AA, we found that only 8.19% of patients achieved at least a SALT30 level of improvement, while near-complete regrowth (SALT90) was exceedingly rare (1.59% of patients). Although a psychological placebo effect cannot be entirely excluded, our approach provides a consistent and reproducible estimate of spontaneous regrowth in a standardized setting. Moreover, the observed low rates of hair regrowth in placebo groups suggest that spontaneous regrowth in untreated patients, those not receiving even placebo, may be even lower.

This response rate is notably lower than previous observations, where up to one-third to one-half of patients have been reported to regrow hair within 1 year of onset

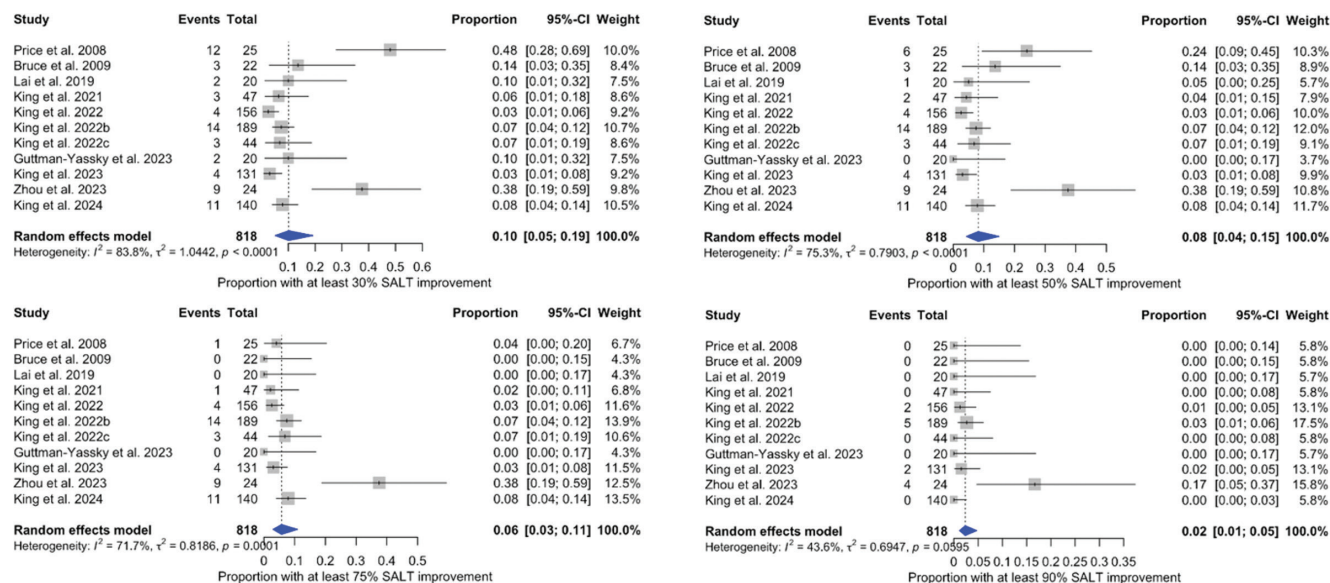


Fig. 2. Proportion of patients achieving SALT improvement thresholds across studies.

(3). The substantial discrepancy between older observational estimates of spontaneous regrowth and the much lower pooled rates in recent placebo-controlled trials suggests that earlier studies may have overestimated the likelihood of spontaneous improvement. This may reflect the inclusion of patients with milder disease, such as patchy AA or shorter disease duration, as well as the use of less stringent outcome definitions and incomplete reporting or control of concomitant treatments.

While spontaneous recovery is generally rare in severe forms of AA, anecdotal reports have described cases of substantial regrowth without treatment. For example, Fernandez-Gonzalez et al. (8) reported 8 female patients with AA totalis or universalis who experienced > 75% hair regrowth after a mean of 2.5 years without therapy, and with sustained improvement at 1 year in 75% of cases.

This study has several limitations. Populations varied in AA subtype, disease duration, and SALT-based inclusion thresholds, which may have influenced placebo responses. Outcome measures were inconsistent, so we harmonized our synthesis around consistently reported endpoints. Although heterogeneity limited detailed comparisons, some patterns were evident: trials with extensive disease (alopecia totalis/universalis) showed very low placebo responses, whereas patchy AA studies reported higher rates. These indirect observations align with clinical expectations and underscore the need for standardized reporting in future trials.

Hair regrowth without active treatment seems to be an exception rather than the norm in AA, especially for those with extensive disease. Given the low probability of spontaneous regrowth in most patients with moderate

or severe AA, our findings support a proactive therapeutic approach in appropriate cases. Delaying intervention in hopes of spontaneous improvement should be approached with caution.

The authors have no conflicts of interest to declare.

REFERENCES

1. Sterkens A, Lambert J, Bervoets A. Alopecia areata: a review on diagnosis, immunological etiopathogenesis and treatment options. *Clin Exp Med* 2021; 21: 215–230. <https://doi.org/10.1007/s10238-020-00673-w>
2. Zhou C, Li X, Wang C, Zhang J. Alopecia areata: an update on etiopathogenesis, diagnosis, and management. *Clin Rev Allergy Immunol* 2021; 61: 403–423. <https://doi.org/10.1007/s12016-021-08883-0>
3. Tosti A, Bellavista S, Iorizzo M. Alopecia areata: a long term follow-up study of 191 patients. *J Am Acad Dermatol* 2006; 55: 438–441. <https://doi.org/10.1016/j.jaad.2006.05.008>
4. Mesinkovska N, Craiglow B, Ball SG, Morrow P, Smith SG, Pierce E, et al. The invisible impact of a visible disease: psychosocial impact of alopecia areata. *Dermatol Ther (Heidelb)* 2023; 13: 1503–1515. <https://doi.org/10.1007/s13555-023-00941-z>
5. Olsen EA, Hordinsky MK, Price VH, Roberts JL, Shapiro J, Canfield D, et al. Alopecia areata investigational assessment guidelines – Part II. National Alopecia Areata Foundation. *J Am Acad Dermatol* 2004; 51: 440–447. <https://doi.org/10.1016/j.jaad.2003.09.032>
6. Islam N, Leung PS, Huntley AC, Gershwin ME. The autoimmune basis of alopecia areata: a comprehensive review. *Autoimmun Rev* 2015; 14: 81–89. <https://doi.org/10.1016/j.autrev.2014.10.014>
7. Lepe K, Syed HA, Zito PM. Alopecia areata. 2024 Feb 8. In: StatPearls [Internet]. Treasure Island, FL: StatPearls Publishing, 2025.
8. Fernandez-Gonzalez P, Saceda-Corralo D, Pindado-Ortega C, Buendía-Castaño D, Fernández-Guarino M, Vañó-Galván S. Spontaneous hair regrowth in eight patients with severe alopecia areata. *Australas J Dermatol* 2018; 59: e318–e319. <https://doi.org/10.1111/ajd.12840>